Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 09/524,029 | BELL, CYNTHIA S. |
| | **Examiner** | **Art Unit** |
| | Michael J. Moyer | 2675 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) _1-3,5-17 and 21-23_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-3,5-17 and 21-23_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: ____ .

## DETAILED FINAL ACTION

### Claim Rejections - 35 USC § 103

1.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

**Claims 1-3, 5-6 and 21-23** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Helms, U.S Patent No. 5,760,760 and further in view of Hosoi et al., U.S Patent No.

5,589,934.

**As pertaining to claims 1 and 21-22**, Helms discloses a method, comprising:

receiving an indicator of the ambient light for a system having a display (col. 3, lines 13-

21); and automatically adjusting a brightness for the display based upon the indicator (col.1,

lines 5-8).

**As pertaining to claims 1 and 21-22**, Helms does not disclose an imager with a

plurality of sensors that are used to accumulate energy, derive an integration time based on the

accumulated energy and to determine the indicator based on that time.  Even though Helms

does not expressly disclose what is stated above, it would be known that the circuit of Helms

would provide this function.  An example would be of the following by incorporating Hosoi et al.

with Helms.

**As pertaining to claim 1 and 21-22**, Hosoi et al. discloses a light emitting apparatus,

which measures ambient light and flash light (col. 1, lines 8-10).  This apparatus can be further

construed as an imager, i.e. camera, because it is able to take a picture with instant film 10. A

sensor is used to read the ambient light.  A photoelectric converter #40 for converting the light

into an analog signal, which corresponds to the intensity of the light being measured.  The

signals are then accumulated in two integration circuits, #44 A and #46 B. Within these two

integration circuits, integration time signals or indicators are generated by the accumulated

signals and outputted to an A/D converter, which is then outputted to the CPU 52. The CPU 52

controls and drives the apparatus. Integration is carried out for time $t1$ by integration circuit A

immediately of measurement button 4 is turned on and is integrated again for time $t1$ when

prescribed time $T$ has elapsed. The integration output accumulated in the first integration is

deemed $Q1$ and the integration accumulated the second time is deemed $Q2$. After the two

integration sessions have taken place, another integration is performed for time $tA$ in order to

measure the ambient light. The integration output is then called $QA1$. The above description

can be applied to two cases in which either ambient light or flash light is involved. In the case

that involves the measurement of ambient light, there is no flash light involved. Therefore when

the measurement button 4 is turned on only the ambient light is being measured the values

described above. So, at the two integration sessions performed for time $t1$, the two outputs $Q1$

and $Q2$ obtained from the two integration sessions are equal to each other $Q1=Q2$. Then the

CPU 52 compares the two outputs and determines that the ambient light was measured by

detecting that $Q1=Q2$. When this happens the CPU 52 carries out photometric calculation

based on the integration output $QA1$ and outputs the result of the photometric calculation to

display 14 as a measurement value obtained during the ambient light measurement. In the

case that involves flash light, a cord connected measurement is processed the same way as

stated above, but in this case $Q1>Q2$, this allows the CPU 52 to determine that flash light is

involved and it proceeds with the proper calculation (col. 3, lines 48-67; col. 4, lines 40-68; col.

5, lines 1-34 and Figs 2-3). In the case of non-cord measurement, integration circuit B is used

because of a light trigger detection circuit 48 that detects the commencement of the flash light

emission. The same operation for ambient is used until the flash light is emitted. Once the light

trigger detection circuit 48 detects the flash light emission, the CPU 52 immediately outputs

integration time signal B in order to cause integration circuit B to start the integration process.

Integration is preformed for time *t1*, the output obtained is called *QF*. Once the integration is

complete a switching signal is used to switch *S1,* which allows the signal *QF* to be inputted into

CPU 52. Then CPU 52 carries out the photometric calculation as stated before but with regards

to the non cord measurement (col. 5, lines 35-54 and Fig. 3).

At the time the invention was made, it would have been obvious to a person of

ordinary skill in the art to combine the reference of Hosoi et al., to use as an example to

thoroughly explain what Helms is disclosing.

The suggestion/motivation for doing so would have been to provide Hosoi et al. as an

example or a teaching tool to better explain or illustrate more thoroughly to what Helms is

disclosing. Helms and Hosoi et al. are very closely related in which how they operate. They

both use sensors, which act like CCDs to obtain the intensity of the ambient light, they obtain

the correct information to adjust the display according to the ambient light or flash light, they use

A/D converters, they use microprocessors in which everything stated is coupled to a display.

The difference is that Hosoi et al. fully describes the integration part of the circuit, whereas

Helms hints at it. Furthermore, Hosoi et al. does disclose that the apparatus can take instant

pictures, thus it can be construed as an imager. Therefore by combining the two references, the

examiner is able to provide an apparatus and explanation that is able to automatically adjust the

brightness of the display caused by excessive or insufficient ambient light.

Therefore, it would have been obvious to combine Helms with Hosoi et al. to obtain the

invention as specified in claim 1 and 21-22.

As per **claim 2**, Helms teaches:

The method of claim 1, further comprising:

using the indicator as an index into a look-up table (col. 3 and 4, lines 51-67 and 1-5,

respectively).

As per **claim 3**, Helms teaches:

The method of claim 1, wherein receiving the indicator of the ambient light further

comprises using a brightness control circuitry (col. 3, lines 25-33), which can be construed as a

light meter circuit.

As per **claim 5 and 23**, Helms teaches:

The method of claim 2, further comprising:

receiving a brightness value for the display from the look-up table (col. 3 and 4,

lines 60-67 and 1-5, respectively).

As per **claim 6**, both Helms and Hosoi et al., both teach that the accumulated energy is

a analog voltage signal (Helms: col. 3, lines 39-50; Hosoi et al.: col. 3, lines 64-67).

2.      **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Helms and Hosoi

et al., as applied to claims 1 or 3 above, and further in view of Toffolo et al., U.S Patent No.

6,337,675 B1.

Helms discloses an indicator of ambient light (col. 3, lines 13-21) uses a

brightness control circuitry (light meter circuit) (col. 3, lines 25-33) that helps the process of

automatically adjusting the brightness of a display (col.1, lines 5-8).

Helms does not disclose light meter circuit that produces a logarithmic

representation of the incident light.

Toffolo et al. discloses a graph that presents a linear representation of the ambient light

vs. the display luminance. Toffolo et al. further states that a logarithmic representation may be

used instead of a linear representation (col. 2, lines 14-61 and Figure 2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the logarithmic representation of Toffolo et al. with Helms.

The suggestion/motivation for doing so would have been to provide a better range of luminance. Compared to a linear representation, a logarithmic has many determining coefficients and other variables that make the representation of incident light last longer, quicker etc.

Therefore, it would have been obvious to combine Toffolo et al. with Helms to obtain the invention as specified in claim 7.

### Claim Rejections - 35 USC § 102

3.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 8-12 and 17** are rejected under 35 U.S.C. 102(b) as being anticipated by Helms, U.S Patent No. 5,760,760.

As per **claim 8**, Helms teaches a system, comprising:

a receiver of light information to produce an indicator (col. 3, lines 13-21); and

a microprocessor, which can be construed as the driver, coupled to the receiver, wherein the microprocessor (driver), #204a, receives the indicator, and, based upon the indicator, automatically sends a signal to control a brightness of a display (col. 3, lines 29-38 and Figure 2, #204a).

As per **claim 9**, Helm teaches:

The system of claim 8, further comprising:

a display coupled to the microprocessor, (driver) #204a, wherein the display, #12,

receives the signal (col. 3, lines 29-38 and Figure 2, #12 and #204a).

As per **claim 10**, Helm teaches:

The system of claim 8, further comprising:

a look-up table in the receiver, comprising a plurality of values corresponding to the light

information and a plurality of values corresponding to the indicator (col. 3 and 4, lines 51-67 and

1-5, respectively).

As per **claim 11**, Helm teaches:

The system of claim 10, wherein the microprocessor, (driver) #204a, receives the

indicator from the look-up table, #204b, (col. 3 and 4, lines 60-67 and 1-5 and Figure 2, #204a

and #204b)

As per **claim 12**, Helms teaches:

The system of claim 10, wherein the plurality of values and the plurality of

indicators in the look-up table are based upon a display type (col. 3 and 4,

lines 60-67 and 1-5, respectively).

As per **claim 17**, Helm teaches:

The system of claim 8, wherein the indicator is a voltage from a sensor (col. 3, lines 13-

22).

4.    **Claims 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Helms as

applied to claims 8, 10 or 12 above, and further in view of Chikazawa, EP 0 883 103 A1

As per **claims 13-14**, Helms discloses system that uses an indicator of ambient

light (col. 3, lines 13-21), the indicator goes through a process in which a certain value is

referenced from a look-up table (col. 3 and 4, lines 51-67 and 1-5, respectively), that is used to

automatically adjust the brightness level of a display (col.1, lines 5-8).

Helms does not disclose a direct view liquid crystal display that can be used as a microdisplay.

Chikazawa discloses a direct view liquid crystal display (col. 1, lines 3-4) in which the color in the display can be automatically or manually adjust from the intensity of the ambient light source or the back source light (col. 1, lines 23-26 and 38-42). This LCD can be used in a video camera, which can be construed as a microdisplay (col. 1, lines 5-9).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the direct view LCD, to be used in a microdisplay of Chikazawa with Helms.

The suggestion/motivation for doing so would have been to provide a microdisplay that uses a direct view LCD with the method of automatically adjusting the brightness of the backlight. In turn, the apparatus, now having a direct view LCD and being a microdisplay, would encompass the methods of automatically adjusting the brightness and color. This would allow the user to operate a smaller video camera compared to a large video camera and the opportunity to view and record a great looking picture that should be perfectly viewed if focused and properly taken.

Therefore, it would have been obvious to combine Chikazawa with Helms to obtain the invention as specified in claims 13-14.

5.      **Claims 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Helms as applied to claim 8 above, and further in view of Bowen et al., U.S. Patent No. 6,046,730.

As per **claims 15-16**, Helm discloses system that uses an indicator of ambient light (col. 3, lines 13-21), goes through a process in which a certain value is referenced from a look-up table (col. 3 and 4, lines 51-67 and 1-5, respectively), that is used to automatically adjust the brightness level of a display (col.1, lines 5-8).

Helms does not disclose an LCD that can be used as a mobile communication device
and a mobile information device.

Bowen et al. discloses an apparatus that encompasses an LCD that can be used as a
mobile communication device and mobile information device (col. 1, lines 9-15, col. 2, lines 40-
54, col. 14, lines 64-67, col. 15, lines 1-9 and col. 15, lines 62-65)

At the time the invention was made, it would have been obvious to a person of ordinary
skill in the art to combine the apparatus' of Bowen et al. with Helms.

The suggestion/motivation for doing so would have been to provide, in general a better
operating apparatus. One advantage is with Helms, LCD and method of automatically adjusting
the brightness, a person is able to conserve the power of a battery. By letting the LCD adjust
itself, it will set the correct brightness to which the user may view the screen, according to the
ambient light present. Also, by letting the LCD do this, it is able to decrease the brightness
during low ambient light conditions. Another advantage is this LCD is able to learn a user's
preferred brightness setting. If the user doesn't like what automatic adjustment has done,
he/she may manually input the setting to their liking and store it in memory. By expanding these
methods to different apparatus', i.e. cell phones, PDA's, a more marketable product is enticed to
the consumers.

Therefore, it would have been obvious to combine Bowen et al. with Helms to obtain the
invention as specified in claims 15-16.

### Response to Arguments

6.      Applicant's arguments filed on 16 May 2002 have been fully considered but they are not
persuasive. With regards to claim 1, on page 2-3 of the REMARKS, the examiner is trying to
teach or show by example how Helms invention operates by incorporating Hosoi et al. as the
"teaching tool". They both use sensors, very similar to CCDs, to obtain or store the

accumulated intensity of light, A/D converters, microprocessors, that control and drive the

circuits, and all of this is coupled to a display. The only difference is that Hosoi et al. expressly

teaches the process of integration, whereas Helms hints at the process of integration but does

not expressly teach it but it would be known that it happens. Therefore that is why the examiner

chose Hosoi et al., as teaching reference that can be incorporated with Helms. Furthermore, by

incorporating Hosoi et al., the apparatus is able to take instant pictures, therefore it can be

construed as an imager.

With regards to claim 8, on pages 3-4 of the REMARKS, the rejection stayed the

same because Helms is still teaching to what the claimed invention is claiming. They both

comprise a look-up table that has predetermined values that correspond to automatically

adjusting the brightness level. According to the specification of the claimed invention, the

calibration operation is the last step in manufacturing and testing, in which the results of

calibration test "may" be stored in LUT (page 3, lines 25-27). These results, which are stored in

the LUT, are used to automatically adjust the brightness level, this is the same thing Helms

teaches because he teaches that predetermined values are stored in memory which comprises

a LUT to automatically adjust the brightness level.

### Conclusion

7.      The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

a).      Yamada, U.S Patent No. 6,256,067 B1. Yamada teaches a electronic camera

that reduces or eliminates the effect of back lighting.

b)      Suzuki, U.S Patent No. 6,078,302. Suzuki teaches a screen brightness control

that uses to a timer and triggering pulse to achieve desired results.

c)      Kouhi, U.S Patent No. 5,684,294. Kouhi teaches a Proximity and ambient light monitor (PALM).

d)      Ottenstein, U.S Patent No. 5,270,818. Ottenstein teaches an automatic brightness control for cockpit displays.

e)      Aoki et al., U.S Patent No. 4,760,389. Aoki et al. teaches an automatic brightness transmitting type display.

f)      Yuasa et al., U.S Patent No. 4,291,979. Yuasa et al. teaches a light measuring device used in photograph that uses integration time based signals.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Michael J. Moyer** whose telephone number is **(703) 305-2099.** The examiner can normally be reached Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Steven Saras,** can be reached at **(703) 305-9720.**

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
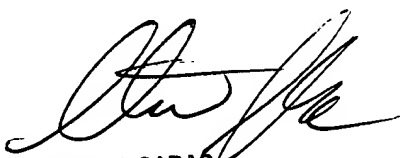
Washington, D.C.  20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the **Technology Center 2600 Customer Service Office  whose**

**telephone number is (703) 306-0377.**

Michael J.  Moyer
Examiner
Art Unit 2675

MJM
July 12, 2002

STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600